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AUTHOR Goldstein, David; Kose, Gary
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ABSTRACT

The effect of differential knowledge of a referent on children's communication effectiveness was investigated. A total of 40 boys and 40 girls from kindergarten and second grade were given one or three opportunities to explore a maze-like construction approximately 22 square meters in area. Each child was then required to verbally describe the correct path through this maze to another child of the same grade and sex. Children with three exploration opportunities communicated significantly more information to their partners than did children with one exploration opportunity, regardless of sex or grade. The evidence that increased referent familiarity resulted in increased communication effectiveness was seen as a constraint on childhood egocentrism. (Author/SB)

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Differential Referent Familiarity as a Determinant of the Communication Effectiveness of Young Children

David Goldstein

and

Gary Kose

Department of Psychology

Temple University

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Differential Referent Familiarity as a Determinant of the Communication Effectiveness of Young Children

A rapidly increasing literature on the ability of children to communicate suggests that young children are less efficient in communication tasks than are older children and adults. In general, two different explanations have been proposed to account for this deficiency in young children. Piaget and his followers (Piaget, 1926; Piaget & Inhelder, 1956; Elkind, 1974) have attributed communication failure to the young child's cognitive egocentrism; that is, the child is incapable of taking the listener's perspective into account when formulating messages. On the other hand, several recent studies (e.g., Maratsos, 1973; Shatz & Gelman, 1973) have indicated that communication failures may be attributed, at least in part, to situational factors such as task difficulty.

Recently, Glucksberg, Krauss, and Higgins (1975) have suggested that four component processes are involved in communication. First, the communicator or speaker must consider the context within which the referent occurs and discriminate relevant aspects of the referent from irrelevant aspects. Second, the speaker must vary the message as a function of perceived characteristics of the listener. Third, the speaker must be sensitive to feedback from the listener. Fourth, the role of the listener must be taken into consideration. Those researchers who have stressed the importance of task difficulty in communication have considered aspects of the first process while those who have stressed the child's egocentrism have considered

aspects of the second process.

In addition to the aspects of the communication process already mentioned, a basic and heretofore ignored aspect must also be considered, namely, the child's knowledge of or familiarity with the referent situation. Clearly, the more one knows about a referent the more one can potentially communicate about it. Since, in general, young children know less about the world than older children or adults, it is not surprising that they communicate less effectively about the world. A central issue, however, is whether young children are necessarily inefficient communicators or whether they can communicate more effectively if given the opportunity to know more about the referent or situation to be communicated about.

The purpose of the present investigation was to demonstrate the effect of differential knowledge of a referent on young children's communication effectiveness. Children from grades K and 2 were given different amounts of exposure to an experimental environment and each child was then required to verbally describe the correct path through this environment to another child of the same age. The primary hypothesis of the present investigation was that communication effectiveness would increase as a function of increased exposure to the referent (the experimental environment) independent of the age of the communicator.

Method

Subjects

The 80 children who participated in this investigation attended a parochial school in a white, middle-class urban neighborhood. Forty children were selected at random from the kindergarten (mean age 5.5 years) and from the second grade (mean age 8.0 years). Equal numbers of boys and girls were selected from each grade.

Design

The experimental task required children to communicate information about an environment after having either one or three opportunities to explore that environment. Children from each grade were randomly assigned in pairs to one of the two experimental conditions. Members of each pair were of the same sex. Equal numbers of male and female pairs were assigned to each condition. Thus, there were five pairs of children in each cell of a 2 (grade) x 2 (condition) x 2 (sex) design.

Procedure

One member of each pair of children was randomly selected to serve as the communicator while the other served as the listener in the experimental task.

The task for the communicator consisted of crawling through a maze-like construction whose perimeter measured 20 feet by 12 feet (6.1 meters by 3.7 meters). The maze was constructed from several long tables covered with sheets to create a series of paths or tunnels. At the far end of the maze was a shoebox

which contained two small toys. Only one path through the maze led to the toys. This path contained four choice points. The three possible alternative paths all led to dead ends. At the end of the longest of these alternative paths was an empty shoebox.

In the one-trial condition, communicators had one opportunity to crawl through and explore the maze and locate the toys. In the three-trial condition, the children had three successive opportunities to explore the maze and locate the toys. The task for all the communicators was to then describe to their partners the correct path to the toys.

Each pair of children was tested in a separate session by an adult male experimenter. The communicator was first taken to the testing room, in which the maze was assembled, while his partner waited in an adjoining room. The communicator was told that he had to crawl on his hands and knees through some "tunnels" and look for a prize. He was further instructed to remember which way he had to go to find the prize because he would have to help his friend find another prize hidden in the same place. Finally, the child was told that if he could help his friend find the other prize they could each keep the prizes they had found. Following these instructions the child was told to crawl through the maze and find "his" prize, i.e., one of the two identical toys hidden in the box. If the child was in the three-trial condition, he was told, after locating his prize, to return to the beginning and crawl to the prize again.

This procedure was repeated, resulting in a total of three trials.

When the other member of the pair was brought into the room, the communicator was instructed by the experimenter to tell his partner about the proper way to crawl through the tunnels and find the prize. After this "orientation" the communicator was taken to an elevated point in the room (atop a large chair) from which he had an overview of the maze. The communicator was instructed to tell his partner all he could to help him find the prize.

Scoring

The entire conversation between communicator and listener was recorded on tape and the path through the maze followed by the listener was noted. Two dependent variables were used to assess communication: the amount of information provided by the communicator and the number of errors made by the listener when crawling through the maze. The amount of information was quantified as the number of message units or specific bits of information (e.g., "now turn there," "look in the box") provided by the communicator. The scoring of the data into message units was based on a set of criteria constructed by the authors. A third person who was ignorant of the particulars of the experiment independently scored the data using the criteria. A high coefficient of reliability ($r = .88$) was obtained and subsequently the judges resolved the remaining differences. These data were then used in the analyses. The num-

ber of errors made by the listeners (e.g., wrong turns) were simply noted from the records of the listeners' progress through the maze.

The hypothesis was that in the three-trial condition more information would be communicated and fewer listener errors would be committed than in the one-trial condition.

Results

An analysis for sex differences was performed as a preliminary step. Since no sex difference was found ($t = 0.14$, $df = 38$, $p > .05$), boys and girls were grouped together in the remaining analyses.

The first phase of the main analysis focused on the number of messages emitted by the communicators. A 2 (grade) X 2 (trials) analysis of variance revealed a significant trials effect, $F\ (1,36) = 8.52$, $p < .01$, but no significant effect for grade or the interaction of grade and trials. Thus, as may be seen from an inspection of Table 1, children with three trials communicated significantly more information to their partners than did children with only one trial, regardless of grade.

Insert Table 1 about here

The second set of analyses were performed on the number of errors committed by the listeners. All of the listeners were successful in ultimately reaching the prize, but as may be seen in Table 2, those listeners whose communicators were in the one-trial condition made more errors than did those lis-

teners whose communicators were in the three-trial condition (chi X^2 (1) = 4.97, $p < .05$). There were no grade or sex differences. Thus, the number of trials the communicators had in the maze accounted for both communicator and listener effects. In neither instance was the grade of the communicator or the listener a determinant of performance.

Insert Table 2 about here

It is possible, of course, that the number of listener errors was the primary determinant of the quantity of messages conveyed by the communicators. In order to assess the likelihood of this possibility, the number of listener errors was correlated with the number of communicator messages. Since the correlation between these variables was not significant ($r = .21$) one may conclude that the communicators were not simply responding to the number of errors made by their listeners, but were rather providing information to their partners as a function of their own experience with the maze.

Discussion

The results of the present investigation indicate that both the quantity of information conveyed by the communicator and the number of errors committed by the listener vary as a function of the communicator's degree of experience with the experimental task. Communication effectiveness has thus been demonstrated to increase as a function of task exposure, regardless of age, at least within the age range considered.

These data contribute to our growing understanding of the major components of the communication process: knowledge of the referent and the context within which the referent occurs, sensitivity to the requirements of the listener, and the listener's behavior.

Several recent studies have considered the importance of the context within which communication occurs and, in particular, task difficulty as a factor in communication effectiveness (e.g., Garner & Plant, 1972; Maratsos, 1973). In general the data indicate that children are more effective communicators in situations where the communication task is simple. One limitation to these studies, however, is the wide variety of tasks under consideration. An important feature of the present investigation, therefore, is the use of a single task with differential exposure to the task. Under the conditions of the present investigation, the data indicate rather clearly that increased task exposure leads to increased communication effectiveness.

The inability of the young child to take the listener's perspective into account has also been cited as a major factor in communication effectiveness (e.g., Piaget & Inhelder, 1956). It has been argued that young children are egocentric and therefore incapable of taking another's perspective into account (Elkind, 1974, p. 16). The absence of an age effect in the present investigation indicates that there are some constraints on childhood egocentrism. The data indicate that

young children can take the needs of listeners into account as evidenced by the smaller number of errors made by listeners whose communicators were in the three-trial condition. It is, perhaps, misleading to conceptualize egocentrism as a characteristic of a child at a particular stage of development. Rather, egocentrism is a label descriptive of inefficient communication. Egocentric communication is not exclusively a phenomenon of childhood, however. Adults often communicate egocentrically in situations that are novel, difficult, or stressful. Furthermore, as Glucksberg et al. (1975) have pointed out, since egocentrism is typically assessed within the context of communication tasks the term egocentrism is used as both the outcome and the determinant of communication failure; that is, the term egocentrism is circular in definition and usage. Certainly, older children can assimilate more information in a given situation than can younger children, and can consequently communicate more effectively. The point is that the quality of communication performance is partly a function of situational factors such as exposure to the referent.

Finally, the present investigation indicates that the behavior of the listener should also be considered in studies of communication. Communication is, by definition, an interactive process and must be studied as such.

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Table 1

Means and standard deviations of number of messages emitted by communicators (N = 40)

Grade		K		2		Total
		$\bar{X}$	SD	$\bar{X}$	SD	
Trials	1	4.20	1.40	4.70	1.06	4.45
	3	5.90	1.37	5.40	1.35	5.65
Total		5.05		5.05		

Table 2

Number of errors committed by listeners (N = 40)

Grade		K	2	Total
Trials	1	12	9	21
	3	6	2	8
Total		18	11	29